

CLAIMS

1. A smart film or material comprising at least two layers having different fluid absorption properties wherein all the layers are cut so as to provide a plurality of close fitting flaps through the film or material such that any strain differences between the layers caused by their different fluid absorption properties will cause the flaps to bend providing a plurality of openings in the layer.
2. A smart film or material comprising a layer, a surface of which has discrete areas which have fluid absorption properties different to the rest of the layer wherein the discrete areas and the layer which they cover are cut so as to provide a plurality of close fitting flaps through the film or material such that any strain difference between the discrete areas and the layer which they cover, caused by their different fluid absorption properties, will cause the flaps to bend thus providing an opening in the layer.
3. A smart film or material according to claims 1 or 2 configured so as to be suitable for use in clothing.
4. A smart film or material according to claim 2 or 3 wherein the discrete areas are produced by attaching a material having different fluid absorption properties to the layer to the surface of the layer.
5. A smart film or material according to claim 2 or 3 wherein the discrete areas are areas of the layer which have been plasma

treated or treated with chemicals or radiation so as to modify their fluid absorption properties.

6. A smart film or material according to claim 2 or 3 wherein the discrete areas are provided by a printing process.

7. A smart film or material according to claim 2 or 3 wherein the discrete areas are provided by an etching process.

8. A smart film or material according to any of the preceding claims wherein the discrete areas and the layer which they cover or all the layers are cut using a laser or a punch.

9. A smart film or material according to any of the preceding claims wherein the discrete areas and the layer which they cover or all the layers are cut so as to provide at least 3 close fitting flaps through the film or material.

10. A smart film or material according to claim 2 or 3 wherein at least some of the discrete areas are individually surrounded by a further discrete area which has fluid absorption properties different to the rest of the layer, the further discrete area being disposed from the discrete area which it surrounds.

11. A smart film or material according to claim 10 wherein at least one of the further discrete areas is provided in the form of a hoop.

12. A smart film or material according to any of the preceding claims wherein the layer or one of the layers is substantially impermeable.

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13. A smart film or material according to any of the preceding claims wherein the layer or one of the layers is permeable.

14. A smart film or material according to any of the preceding claims which forms one element of a multi-element textile.

15. A smart film or material according to claim 1 or 3 wherein the layers have different hydrophilic properties to each other.

16. A smart film or material according to claim 2 or 3 wherein the layer and the discrete areas have different hydrophilic properties.

17. A smart film or material as hereinbefore described with reference to the figures 1 to 3 or figures 4 to 6.

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